

## OBJECT ORIENTED SYSTEM FOR MANAGING COMPLEX FINANCIAL INSTRUMENTS

### ABSTRACT

Object oriented design strategies and patterns are applied to financial data processing systems for processing and modeling of financial products (also referred to as financial instruments) with an emphasis being on derivative products. The system employs valuation independent, well-defined financial components (also referred to as financial events) that can be combined to build new financial structures. A general purpose software model is provided for representing the structure and characteristics of these products. A declarative specification language is provided to describe financial instruments in a consistent manner that lends itself to processing in such an object oriented system. A general traversal process is provided that can be applied to the macro structure of a financial instrument to implement various functions that produce results based on such information, such as the stream of financial events associated with the instrument, or the pricing or valuation of the instrument. Techniques including double dispatch and other mechanisms are further provided to provide flexible means of associating the appropriate processing methods with the diverse range of instrument characteristics that are encountered in a typical financial institution's course of business.